

MATERIAL SAFETY DATA SHEET

Copper Sulphate Pentahydrate

Section 1. Product Information

Product Name: Cupric Sulphate Pentahydrate

Formula: $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$

CAS No.: 7758-99-8

Emergency Phone: (Canutec) 613-996-6666

Distributed by Pestell Minerals & Ingredients, New Hamburg, ON Canada

Section 2. Toxicological Information

Inhalation: Inhalation of dust may cause irritation for upper respiratory tract

Ingestion: Toxic orally in accordance with FHSLA Regulations. Acute oral LD50 472 mg/kg rats.

Skin: Non-toxic. Skin irritation index is zero in accordance with FHSLA Regulations

Eyes: Corrosive in accordance with FHSLA regulations. Eye irritation score: 24/hrs=41.61 Hrs=corrosive

Acute Toxicity: Copper Sulphate is emetic

Chronic Toxicity: Prolonged ingestion might increase liver copper content

Exposure Limit: Not identified

Biological Exposure Indices (BEI): not available

Section 3. Physical Data

Material at Normal Conditions: Solid

Appearance and Color: Blue crystals or powder

Odor Threshold: Odorless

Boiling Point: $-5 \text{ H}_2\text{O}$ @ 150°C (302°F) (760 mmHg)

Freezing Point: Not available

Melting Point: $4 \text{ H}_2\text{O}$ @ 110°C (230°F)

Solubility in Water: 30°C = 24.3 g/100g, 100°C = 203.3 g/100g

Evaporation Rate: (Ether=1.0): Not available

Specific Gravity: 2.284 (water = 1) Vapor Density: (Air = 1): Not available

Molecular Weight: 249.69

Coefficient of Water/Oil Distribution: Not available

pH: 3.0 to 4.5

% Volatiles by Volume (at 20°C): Not available

Section 4. Reactivity Data

Stability: Stable

Conditions to Avoid: Product is highly soluble but does not react with water

Incompatibility (Materials to Avoid): Contact with magnesium metal may generate dangerous levels of hydrogen gas. None when product remains dry.

Hazardous Decomposition Products: None at normal process temperatures. Above 600°C , toxic sulfur may be evolved

Hazardous Polymerization: Will not occur

Section 5. Fire or Explosion Hazard

Conditions of Flammability: Not flammable
Hazardous Combustion Products: Sulfur Dioxide and Cupric Oxide
Flash Point: Not applicable
Explosion Hazards: Not applicable
Auto Ignition Temperature: Not available
Sensitivity to Mechanical Impact: Not available
Sensitivity to Static Discharge: Not applicable
Fire Extinguishing Procedures: Use extinguisher media for surrounding fire (-C)2, dry chemical or water. Avoid direct water stream on molten material (splattering occurs). Do not scatter spilled material with high pressure water streams. Dike fire. Control water for later disposal.

Section 6. Hazardous Ingredients (mixtures only)

Material or Component: Not applicable
Concentration: Not applicable
Hazard Data: Not applicable

Section 7. Preventive Measures

Personal Protective Equipment: Wear NIOSH approve respirator for toxic dusts and mist
Eyes and Face: Chemical splash goggles or face shield where splashing is possible. Contact lenses should not be worn when working with this material.
Hands, Arms and Body: Gloves and long sleeved cover-alls.
Storage: Store in a closed container in a cool, dry well ventilated area away from heat sources and reducing agents.
Normal Handling: Avoid contact with eyes, skin and clothing. Avoid breathing dust. Use good personal hygiene and housekeeping.
Engineering Controls: For ventilation provide general and/or local exhaust ventilation to maintain dust or fume levels below exposure limit.

Environmental

Degradability: Not available
Aquatic Toxicity: Public water system, follow local regulations. Toxic to fish and plants. Fish toxicity critical concentration is 235 mg/l and plant toxicity is 25 mg/l.
Spill or Leak: Always wear personal protective equipment. Sweep up crystals or powder, vacuum is preferred. If spilled solution is in a confined area, introduce lime or soda ash to form insoluble copper salts and dispose of by an approved method. Prevent accidental entry of solution into streams/water bodies.
Waste Disposal: Contact appropriate local, provincial and federal officials. If accidentally spilled into public water, consult regulations.

Section 8. First Aid Measures

Inhalation: Remove the person from exposure and bring to fresh air. If breathing is difficult give oxygen and contact a physician.
Ingestion: May cause severe gastrointestinal tract irritation. Give conscious victim 2 to 3 glasses of milk or water to drink. Induce vomiting in conscious person by sticking fingers down throat. Lean head forward to avoid breathing in vomit. Do not induce vomiting or give liquid to an unconscious person. Contact a physician.
Skin: Flush with large amounts of water for at least 5 minutes. Remove contaminated clothing.
Eyes: Check for and remove contact lenses. Flush with large amounts of water for at least 15 minutes. Hold eyelids open during irrigation. Consult a physician.

Section 9. Hazards Identification

Potential Acute Health Effects: Slightly dangerous in case of skin contact (corrosive) and eye contact (corrosive and irritant). Inhalation may cause an irritation of the respiratory tract characterized by coughing, shortness of breath and even choking. Ingestion may cause repeated vomiting, metallic taste, heartburn and even death in severe cases.

Potential Health Effects

Carcinogen: Not available

Mutagenic: Not available

Tetragenic: Not available

Reproductive Toxicity: Not available

Repeated exposure to a toxic material may cause general deterioration of health by an accumulation in one or many organs.

Shipping Information

TDG Class: 9

PIN Shipping Name: Environmentally Hazardous Substances solid N.O.S. (Cupric Sulfate)

UN 3077 PG III

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